

(19)



JAPANESE PATENT OFFICE

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PATENT ABSTRACTS OF JAPAN

(11) Publication number: 09089650 A

(43) Date of publication of application: 04 . 04 . 97

(51) Int. Cl

G01J 1/00
G01H 11/00

(21) Application number: 07245794

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(22) Date of filing: 25 . 09 . 95

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(54) MEASURING APPARATUS FOR QUANTITY OF LIGHT

(57) Abstract:

PROBLEM TO BE SOLVED: To obtain a measuring apparatus by which a quantity of light can be measured with a simple configuration, at low costs, at a high response speed and with high accuracy by measuring an acoustic signal which is generated on the basis of a change, in the volume of a member, caused by the absorption of irradiation light when a sound-generating member is irradiated with light intermittently.

SOLUTION: Light from a light source 9 is condensedly cast on a sample 25 held by a sample holder 20 through a lens optical system 10 so as to be irradiated. Its optical intensity is adjusted by a zoom lens inserted in the optical system 10, and the optical intensity is monitored by a photosensor 12 via a quartz glass 11. Light which is transmitted through the sample 25 is blocked by an absorber 14 in order to prevent it from being returned. A measuring system as a whole is installed inside a nitrogen-purged atmosphere chamber 16. An acoustic signal is detected by a sensor 22 which is constituted in such a way that a receiving plate made of alumina is attached to lead titanate zirconate as a piezoelectric material. Then, it is measured and

recorded whenever obe pulse is irradiated while it is interlocked with an optical-intensity signal monitored by a personal computer 18 which controls the zoom lens 10.

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